

TWO SMALL
TREATISES.

The First,

A further ESSAY towards
the History of this *Present Fever*,
with its two Products the *Mar-*
bis Cholera, and the *Gripes*.

Wherein are propos'd

Some Effectual METHODS for
the CURE thereof.

The Second,

A Medico-Philosophical ANALOGY
betwixt *Vegetable* and *Animal Juices*,
viz. Betwixt the Juice of the *Grape*,
with other Fermentable Liquors, and the
Blood of Humane Bodies, in order to Fermen-
tation and the right understanding of *Fever*.

Both humbly

Offered to the Consideration of the
Colledge of Physicians.

By *W. Simpson*, Doctor in Physick.

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the *White Hart* in *St. Paul's Church-Yard*. 1678.

THE
PREFACE
TO THE
READER.

Candid Reader,

WHen I had Compiled these Two following
Small Treatises, I thought it not im-
pertinent to add somewhat by way of
Apology for a short Essay I lately pub-
lished concerning the History and Cure of this New
Fever, at which some, I perceive, were offended. I
shall comprize what I have to say for it in short in
these two things: viz. The Nature, and Manner of
it. As to the first, the Historical part, I can as-
sure thee, as to the matter of fact was faithfully per-
form'd; And it was but an Essay, and that a little
one too, than which nothing can be less in the Cata-
logue of Entities, nor more easily reducible, by a
slight cancel, into its primitive non ens: So that
if it was a fault, it was but a small one, and there-
fore amongst good Natures may solicit an act of Obliv-
ion. As to the latter, viz. The Manner, it came with
great submission, offering it self to be try'd by the
A 2 grand

The Epistle to the Reader.

grand title of the Colledge. It's true, I confess myself culpable, in that I did not Collect a larger set of Virgals, before I committed that little (and but discernable) thing to the Press. And indeed it was a thing so small, as, on its behalf, it's not worth the while further to Apologize: only here once for all, I do confidently assure you, that I am so far from any inclination to Empiricism, or from leaning to the seditious Art of Quacking, as that I would rather undertake to cancel it out of my own, and chuse to have it raz'd out of others memories, than it should introduce any such jealousy. And do here further declare, that whatever Improvements are made in Pharmacy in order to the curing of Diseases, are no otherwise to be made use of than according as the skilful Physician (the Patient applies himself to) shall in his judgement think fit, selecting one or the other, as he shall think most proper for his present case.


If therefore, Candid Reader, thou wilt suspend thy Judgment concerning the ensuing Treatises, until what we have to offer concerning Fevers, which will be chiefly in our Pneumatologia (in which, these are only introductory) be arriv'd: If thou or in what other Essays we have ready, or are preparing for the Press, I shall be found to all day being ingradingly or unbecomingly to Physicians, or any body our Noble Art of Healing, then let what is said be a Malefactor to so worthy a Faculty as my own. Mean while as these Labours find a favourable acceptance, may give encouragement to our further improvements and prosecutions of what is here proposed. Farewell.

Thomas W. Simpson.

A FURTHER
ESSAY,

Towards the History of this
Present Fever.

With its two Products, the Morbus
Cholera (or frequent retching to
vomit) and the Gripes; the Diseases
now most common, and whence our
late Bills of Mortality have chiefly
swell'd, &c.

 **W**HERE having very lately made some
small Essay towards the right un-
derstanding of this new Fever, so
grassant in City and Country,
and finding that it yet spreads
much abroad, and that not barely
and solitarily under its own guise in many, but
also in others under the masks of a Morbus Cho-
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The Epistle to the Reader.

grand test of the Colledge. It's true, I confess myself culpable, in that I did not Collect a larger set of Tryals, before I committed that little (and but discernable) thing to the Press. And indeed it was a thing so small, as, on its behalf, it's not worth the while further to Apologize: only here once for all, I do confidently assure thee, that I am so far from any inclination to Empiricism, or from leaning to the spurious Art of Quacking, as that I would rather endeavour to cancel it out of my own, and chuse to have it raz'd out of others memories, than it should introduce any such jealousy. And do here further declare, that whatever Improvements are made in Pharmacy in order to the curing of Diseases, are no otherwise to be made use of than according as the skilful Physician (the Patient applies himself to) shall in his judgment think fit, selecting this, or the other, as he shall think most proper for his present case.

If therefore, Candid Reader, thou wilt suspend thy Judgment concerning the ensuing Treatises, until what we have to offer concerning Fevers, which will be chiefly in our Pyretologia (to which these are only introductory) be extant: if therein or in what other Essays we have ready, or are fitting for the Press, I shall be found to do any thing degradingly or unbecomingly to Physicians, or unworthy our Noble Art of Healing, then let what is due to a Malefactor to so worthy a Faculty be my doom. Mean while as these Labours find a favourable acceptance, may give encouragement to our further improvements and prosecutions of what is yet behind. Farewel.

Thine, W. Simpson.

A FURTHER ESSAY,

Towards the History of this
Present Fever.

With its two Products, the Morbus Cholera (or frequent retching to vomit) and the Gripes; the Diseases now most common, and whence our late Bills of Mortality have chiefly swell'd, &c.



WE having very lately made some small Essay towards the right understanding of this new Fever, so grassant in City and Country, and finding that it yet spreads much abroad, and that not barely and solitarily under its own guise in many, but also in others under the masks of a *Morbus Cholera*, known by the much vomitings, or often
B retch-

retchings to vomit ; and in others under the Livery of the Gripes, with looseness, or in some looseness without Gripes ; we thought it might be no small piece of service to our Countrymen, to make further disquisition into the nature, symptoms, and branchings thereof ; how it appears in several persons variously disguised, so as we may easily by the footings thereof trace it to its first head or spring : As also to enquire into such Methods as directly lead to the cure thereof ; keeping pace with the best of ours and others observations.

As to what peculiar sort of fermentation in the blood, this Fever with its Attendants belong ; and to which Classis in our *Medico-Philosophical-Paralelism*, betwixt Animal and Vegetable Juices, its reducible ; we in that following Treatise) take an occasion to discourse,

First, as to the Symptoms themselves, under which it appears, while in its native dress, they are generally of this sort (of which we have touched before in our former Essay) viz. coldness and chilness at the beginning, pains in the head and back, in (some with down-right shaking, in the rear of which follows intense burning heat, thirst, some being more thirsty and hot by much than others) profuse and immoderate sweatings, faintings, and great debilities, a general lassitude, and indisposedness, with a dulness and stupor in the head, which in many is followed by a *Delirium*, accompanied with
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flumberings : it sometimes emulates a Quotidian, other-while a Tertian ; especially for the 3 or 4 first fits ; sometimes undergoes quick vicissitudes of being cold and hot in two or three hours very uncertainly , the Pulse irregular , feverish, and high, pains at the stomach, &c.

Otherwhile its attended with other Symptoms, by which it appears under the mask of other diseases, (*viz.*) sometimes of vomitings or frequent reiterate, and even incessant retchings to vomit , emulating in some measure a *Morbus Cholera*, (casting up what-ever they take) attended with great inquietudes, and tossing restlessness, accompanied with thirst, and in some with profuse Sweatings, &c.

And as with some its cloth'd with the aforesaid Symptoms, so in others it puts on the guise of the Gripes with looseness, observing some certain periods of time in its access in manner of Paroxysms, coming by intervals of time, much-what like the Fever under its more usual Symptoms : and in some, as the Fever is more continued, so in imitation thereof (nature drawing faint shadows of the Original) the Gripes and looseness are more continued. The usual Symptoms which attend the Fever under this Livery of the Gripes, are faintness, want of Appetite, dizziness in the head, griping pangs, debilities by looseness, carrying off the spirits and strength in a colliquating fluor of the solid parts (after exhaustion of the native juyces) by the postern gate: all which symptoms do but represent the same

Fever under different dresseſes, varied according to the diverſity of conſtitutions, as the compage of the blood in ſome is looſer and fitter to receive thoſe impreſſions from the air, emerging from ſome exotick ferment therein begot, from ſome late viciffitudes and interchanges of weather : The ætiology of all which, is not our work here, reſerving that to its proper place in our *Pyretologia*, or Eſſay to a new Hypotheſis of Fevers.

From the branching of which Fever into the Gripes (together with other uſual cauſes from the late ſeaſon of fruit-eating, &c. concurring) it is that our Bills of Mortality have of late ſwelled ſo much in that particular : in as much as we obſerve by the account there given, that near a fourth part of the whole that die, go off, or melt away by the Gripes.

Thus having taken a ſcantling of the Symptoms this new Fever is cloth'd with, and obſerv'd the ſpreading nature thereof, how afflicting to moſt, and how under its own Garb, and under the Dreſs of Vomiting, and the Gripes, it becomes mortal to many, thence encreaſing our Bills of Mortality of the City and Suburbs, beſides the ſwellings thereof in the Country about ; the next and main thing we propoſe to conſideration, is how, or by what Methods, this Fever with its two Products, the *Morbns Cholera* (or at leaſt the Shadowings thereof) and Gripes, (the natural products thereof) are beſt to be cured, that ſo we may make
our

our designs appear like themselves, generous, and such as truly tend to the improvement of the noble Faculty of healing: inviting hereby all others whose Genius bends towards the advancement, of their worthy imploy, to make what observations fall in their way, which are notorious, to the cure of this or other diseases, frequently and epidemically emerging upon the Scene.

First therefore what relates to the cure of this Fever, as in its native colours, we advise negatively, and next positively. As to the first, *viz.* negatively, we advise against all manner of Vomits, as we have in a short Essay (ready for the Press) evinced the *non-necessity* of Vomits in the cure of Diseases, particularly of Fevers, Agues, and Convulsions: To which, when extant, we refer the Reader for further satisfaction.

Secondly, we advise against all hot sweating Medicines, the reasons whereof we shew from our observations by matter of fact, set down in our former Essay; where is shewed how Patients treated by hot sweating Medicines, generally grow worse, and the symptoms become stronger, and more rebellious to better Methods afterwards ordered.

Thirdly, we advise against a too cooling Regimen, or Methodical prescriptions of Emulsions, or such other Medicaments of that kind, as too much relax or unbind the compage of the blood, especially too closely following the contrary motion of nature singly considered, or so brought on by art.

Fourthly, as to bleeding, it is dubious; for if the first Methods be observ'd we below prescribe, Phlebotomy will be very necessary: if that of our own, then, unless in Plethorick bodies, or where the Indications are very cogent, it is not much needful.

As to Purges we advise them, especially the ordinary sort, to be rarely given, except at the heel of the Fever, or in some particular cases, where the nature of the Symptoms, and constitution of the Patient will bear it. And for Glysters we advise them but seldom, unless the necessity of a more than ordinary Costiveness indicate: In what Methods, and in what not, may afterwards be spoke to.

As for Cordials, such we mean, as usually bear that name, (how deservedly we shall not here dispute) we look upon them in these cases as wholly out of door. And if any Cordial should be thought necessary, we would advise it might rather be a Glass of some generous Wine, as of the best Sack, or rich Claret, or of balsamical healing Ale, moderately and at due seasons taken; which we should commend before the best Cordials in all the Shops, as being, because natural, better prepared Liquors, and whose Principles are more genuinely complicated, and better compounded, and consequently more agreeable to Nature, then all the Cordials artificially prepared: For this I certainly conclude, that those Preparations or Medicaments, wherein Art doth not out-do Nature; that by so much such come
short

short of what they ought to be, and therefore are to be rejected or post-pon'd; and might I freely give my judgment, I had much rather chuse to give a Glass of one of the aforesaid naturally prepared Cordials, I mean where no greater Art is us'd, than is needful to set the Principles of such Natural Juices into their due fermentation, with other additional requisites, than all those Waters and Cordial Spirits, prepared in the *Dispensatory*, however dulcify'd by additional Syrups, &c. nay, if I should descend one Note lower, and say that a Glass of right good Balsamick Ale, boil'd and skim'd, and half or one ounce of good Brandy mixed therewith, or (to those who disgust Brandy,) as much of the best *Aqua Mirabilis*, or *Aqua Epidemica*, is really a better Cordial, than the best Cordial Spirits or Waters in the Shops, simple or by Art compounded, I think I should not say far wide of the truth. And while I am speaking of Cordials, I call to mind what I have heard his Majesty (who doubtless has much judgment in these Affairs) not long since say, in a Discourse he was pleas'd to condescend to upon this Subject, That he look'd upon *Goddard's Drops* (skilfully manag'd) as the greatest Cordial in the World: concerning the Excellency of the Virtue whereof, he was pleas'd to give us several remarkable Instances.

And as for Juleps, methinks no better can be given in these Cases than to acidulate three parts of good fresh small Beer (neither bitter, sour,

nor new) and one of good white Wine, with some drops of Spirit of Sulphur *per Camp.* : and for the Patient to drink plentifully thereof; or to take fifteen or twenty drops of the *Acid. Tincture* afterwards prescribed in every draught of fresh small Beer.

And as this is what we advise negatively, so in the next place we shall come to what we would positively insist upon, and here, to shew in short, what Methods are most proper, and expeditious, for the curing this new-coyn'd Fever, with its new products (*viz.*) the Ape of the *Morbus Cholera*, and the Gripes, which are like the *circumjoviales*, that move in the same sphere with (but at some distance from) their master-Planet.

First then as to the Fever it self, under any, or the worst of the aforesaid Symptoms, I would to a Physician, who has not attain'd some more noble and commanding *Arcana*, propose this following Method, *viz.* first, As soon as he is called, forthwith to open a Vein, taking six, eight, or ten ounces: Then to give in good well-ordered small Beer, with a fourth of white Wine, ten, fifteen, or twenty drops of a right rectify'd Spirit of Hartshorn, or *Tinct. Microcosm.* prepared, as is afterwards set down; or in lieu of that, which would yet be much better, to give eight, ten, or twelve drops of Dr. Goddard's drops every half hour, forbearing any other drink but such small Beer and drops as aforesaid taken cold; and so as not to cause any sweat, if the Patient

of the present Fever.

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Patient be up, but if in bed, may bring on a gentle breathing and no more: After the using the drops in small Beer, as aforesaid, for about eight hours, then for four hours to take nothing but bisket, broke into small Beer, or in lieu of that, to take some Water-gruel, with a fifth or sixth of white Wine added thereto; two hours after which refecton, if need be may be prescribed the following *Anodyne*:

℞ *Aq. Paralyf.* ℥ 2. *Syr. e Succo Citri, de Meconio, ana* ℥℥: *Fiat haustus.*
Vel ejus vice.

℞ *Aq. Naph.* ℥ 2. *Syr. Limon.* ℥ 1. *Laudan. liquid. Helmont. gut.* 5. 8. 10. vel 12.
Misf.

The next day to treat the Patient with the ordinary Julep above - mentioned, to each quart bottle of which may sometimes be added three or four ounces of the best Syrup of Lemons: or in lieu of that may fifteen or twenty drops of this following *Acid Tincture* be given in every draught of fresh small Beer: (*viz.*)

Tinctura Acida.

℞ *Spir. Vitrioli & Spir. vini ana, fiat per se distillatio ac rectificat. cum quo extrahatur Tinctura ex croco. Dos. gutt.* 15 vel 20.

If the Physician shall think a Glyster needful, let
it

it be much-what according to the following form:

*In decoct. lact. & aq. font. ana, in hujus Ex
solv. Mann. opt. ℥ 1. vel 2. colaturæ ulti-
mò addendo Spir. C.C. vel urinæ rectif.
sesquidrachma, M. F. Enema.*

If the Patient be delirous, the Physician may ply him with *Tinctura Microcosmica*. The which is prepared as followeth :

Tinctura Microcosmica.

℞ *Spir. urinæ hum. putrifac. distillat. ac recti-
fic. nat. & cum Spir. vini circulatione
operationum in liquorem redact. hujus ℞
℥ 4. & effund. ℥ss croci Angl. opt. ac
in vitro hermetice sigillato digere leni calore
per dies 3 vel 4, decantetur ac usui ser-
vetur.*

Of which he is to have given in his common drink (let it be either small Beer, white Wine Posset-drink, or some proper simple distilled water) as often as he calls for it, that is, ten, twelve, or fifteen drops in every Glass; or if not in a capacity for calling, give him thereof once every half hour: Or in lieu of that, (which for this very intention may be much better, as being found by frequent Experience very successful) may give the Patient the like quantity of *Goddard's* drops after the same manner, and
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in the same or other the like proper Vehicle. And to some persons, to whom Epispasticks may not be improper, where it will be sometimes necessary, when the blood has let fall or precipitated its *acidum* upon those parts, by which principally the Fabrick of the Spirits are manag'd, whereby idle dreams, dotage or *Delirium* is brought on; In such Cases, I say, it will be necessary to make the blood reimbibe its deposited febrile matter: which can no better be done, than by the aforesaid Medicines, so taken as to cause a breathing sweat, whereby the blood licks up what it had let fall before, and then if it be carried away by other conduits, *viz.* the Pores or the Urinary Vessels, it's well, or if remanded to the Stomack whence the shadowings of the *Morbus Cholera*, or if to the Intestines, whence looseness, or gripes, both which by the facil access of good Medicaments, may then be more easily cured, of which more in our intended Discourse of Fevers.

If this Fever appear under the Symptoms of a *Morbus Cholera* (or at least resembling that disease) *viz.* with Vomitings, or great provocations and retchings to vomit) (as in many Patients it doth) then may the Physician (who has not yet arriv'd at better and more powerful Medicaments) take much what the same Method before named: only this following Stomachick (if need be) may be added to what is aforesaid, *viz.*

*Sal Absinth. Scrup. i. vel Drachm. β ex Cochl.
 i. succi Limon. post effervescentiam per se,
 vel ex cyatho Aia calida, vel Vini Clareti
 decoct. propinand.*

What Method we chiefly insist upon in the quieting and composing such impetuous tumults, and rebellious insurrections of the Stomack, we shall hint below.

Lastly, If this Fever come disguis'd under the livery of the Gripes and Lo-senss, as it of late hath very much done, to the great increase (with other concurring Causes) of our late Bills of Mortality: which Disease, in many persons, is nothing else but this Fever, as the blood is under a discharge of the febrile matter, or exotick *Acidum*, thence transmitted from the Arteries into the Intestines, which there fretting upon the tender Membranes, and sensible fibrous parts, afflicts those Patients (labouring thereunder) with those griping pangs, vitiating the peristaltick motion of the Guts, by too frequent irritations thereof, gives often (and sometimes frustraneous) motions to stool, carrying off the solid parts in a colliquating fluor, and therewith exhausts the spirits and strength, that if by some Medicine a turn be not given to the Disease, carries the patient away in no long time; and when some little is discharg'd by the Arteries into the Stomach (but not so much as to procure vomitings) then is the Appetite quite taken

taken away, and a restlessness brought on together with the faintings, dizziness in the Head, thirst, &c,

And where the febrile *Acidum* thus discharg'd from the Blood and transmitted into the Guts is more powerful than ordinary, there it exco-riates the tender Membranes and Films of the finaller sanguine Vessels, whence it's heightned into a Dysentery or bloody-Flux.

As to the Cure of which Gripes or Looseness, or the Fever under the masque thereof: where the Physician has not by industry or skill in the improvement of *Pharmacy*, attain'd more generous and effectual *Arcana*, I would advise the following Method, (*viz.*) first to open a Vein, and to take six, eight, or ten ounces; after which give every half hour, or every hour fifteen or twenty drops of *Tinct. Microcosm.* prepared as aforesaid, or good Spirit of Hartshorn, or which is yet better and more proper (to dulcifie those acid and acrimonious Juices and to reduce them to their *Eucrasia*) *viz.* *Goddard's* drops, in a Glass of fresh good small Beer, or in lieu of that in white Wine Posset-drink. So do for five, six or eight hours, then the night after prescribe the following *Anodyne*:

℞ *Aquæ ex decoct. vel infus. Scordii filtratæ*
℥ 2 vel 3 syr. è succo Citri ℥ β. Laud.
liquid. cum sale Tartari volat. præpar. a gutt.
vi. ad xii. M. F. haustus.

Or

Or in lieu of that, may be this following,

℞ *Infus. Paralyf. Scord. ana* ℥ i. *fyr. e Mechon. e succo Citri ana* ℥ β. *vel drachm. vi, Laudan. liquid. præfati gutt. v. M.*

Which Anodine may be repeated (if need require) for several nights, or every other night. Then the next day give *Tinct. Microcosm. &c.* once in 2 hours, according as aforesaid: And if amongst hands at due seasons you would give a Cordial, let it be as followeth.

℞ *Infus. flor. Paralyf. ℥ iv. Aquæ epidem, vel Spir. Carmin. Sylvii ℥ 2. Diascord. drachm. 3. fyr. Carioph. ℥ i. β. perl. præpar. (viz.) pulv. & pull. e chel. Cancr. comp. ana drach. 1. M. dos. cochlear. ij agitandò ante quamlibet effusionem.*

Or in lieu of that, may this Cordial be taken, *viz.* In a good draught of the best and most healing Ale, (such as is clear, and has a little hop) boyled and skim'd, take one or two spoonfuls of *Aqua Epidemica*, or as much good Brandy, which may be drunk twice or thrice a day; or sometimes a Glass of the best Sack that can be procured.

If the Gripes be so high as to twine towards a Dysentery, then may this following Glyster be prescribed, after the use of the drops aforesaid, (*viz.*)

℞ *Vii*

℞ *Vin. alb. & Cerevis. tenuis ana ℥v, vel hujus vice Lact. & Aq. font. ana ℥v. Mellis Mercurialis ℥ij. Mann. opt. ℥ 3. Colaturæ add. Balsam. Lucatelli ℥ β. cum vitello ovi conguass. coletur iterum, ac ultimo add. Spir. CC. vel urinae ℥ 1 β. M. F. Ene-
ma.*

And in lieu of the Anodine aforesaid, may in this case the following healing Anodyne be prescribed.

℞ *Pilul. Diaphor. (viz. Matth. Pills) a gr. v ad xii; Bals. Leucatel. opt. prepar. gr. xv. Diascord. ℥i. vel ℥ β. M. cum perl. prepar. vel pulv. e chel. Cancr. comp. q. s. ad bolum fac. hora som. ex hauſtu Cerevis. tenuis & Vini alb. vel Clareti propinand.*

And then at the heel of those Fevers, under what masque soever they have appeared, it will be necessary to prescribe a Purge, which if the Physician pleaseth may be as followeth.

℞ *Infus. Rhab. veri & fol. Orient. in ana Aq. f. & Vini alb. fact. q. s. in cujus colatur. ℥ 4. solv. Mann. Calab. ℥ β. vel 1 syr. ros. solut. ℥ 1. coletur iterum, ultimo ad Sal. Sennerti per deliq. solut. drach. 1. M. F. potio cum regimine Exhibend.*

Now

Now come we to touch upon our own peculiar Method we chiefly use in the management of the cure of this Fever, either as considered under its more usual Symptoms, or mask'd under those of the nothous *Morbus Cholera*, or the Gripes : which because it is perform'd by some *Arcana*, is thence (and that not undiscernedly) rais'd a note above the former.

What the *Arcanum* is we chiefly use, we have darkly enough hinted in our former Essay, the mechanick improvement whercof we are now upon, and have already made some progress therein : what cures we have known perform'd thereby is not now our present task, but shall reserve that, to its proper place in our *Pyretologia*. Only this mean-while we can assure the Reader, that we have from our own and anothers observations, known considerable cures perform'd, both as to this Fever singly considered, where the Symptoms have been very strong, even to a *delirium*, and yet beyond the expectation of those nearly concern'd, have by the blessing of God been cured : and when I have come to some who have had the Fever under the livery of the *Morbus Cholera*, afflicted with continual provocations and retchings to vomit, and that for 3 or 4 days, getting no rest thereby, I have with 2 or 3 doses of that Antifebrinck *Arcanum* strangely allayed that great perturbation of the stomach, and quieted the rebellious tumults thereof, calming those boisterous seas, taming those head-strong humours, and as it were charm-

charming those otherwise inexorable riots, and that too without the help of one grain of *Opium* in the whole Preparation. To perform which very thing (if it could do no more) was sufficient (if known) to blazon its own worth, and to recommend to the world the excellency of any *Arcanum*.

And I have not only found it succesful in the quieting the disorders of the Stomach aforesaid, but also by our own and another ingenious and worthy Physicians observations, have known the like success in the cure of the Gripes, to enumerate the particular instances wherof is beside our present scope, leaving that to another place.

How this or other continued Fevers may by precipitation of the febrile matter be made to split into Paroxysms, and so to become intermitting, and how then by a facile method may be cured; and how easily and readily the blood may, by the due exhibition of good Medicines, be ting'd is work for our *Pyretologia*.

And that we may here give some small specimen of what may be perform'd, by another Set of Medicaments than are usually found in the Shops, we would barely recite the things chiefly to be relyed upon (as a new *Apparatus Medicinalis*) in order to the more speedy and effectual cure of this and other Fevers, with their aforesaid attendants, the *Morbus Cholera* and the Gripes, which are as followeth.

1. *Ens Veneris liquidum Acidum*, dos. a gr. 3 ad 5 vel 6 ex cyatho vini albi & cerevisia propinand.

C

2. Elixir

2. *Elixir Proprietatis*, prepared by a peculiar *Menstruum*, in which is first drawn a Mineral Tincture of Admirable Efficacy in many Diseases, especially Fevers: *Dos. a gutt. vi ad x. 12. vel 15. cum quovis vehiculo proprio propinand.*

3. *Tinctura noct. Cathart. ex spec. hieræ picæ simpl. superadditis nonnullis aliis speciebus appropriatis cum spir. Vinoso extract. & in B. M. ad dimedium extillat., & sale Tartari volat. acuand. dos. a cochl. ꝑ. ad cochl. 1. mane exhibenda.*

4. *Laudanum cum sale Tartari volatili fact. dos. a gutt. iij. ad 6, 8, vel 10.*

5. *Goddards drops. dos. a gutt. vj. ad xx. ex quovis vehiculo proprio exhibend.*

6. *Tinctura Microcosmica dos. a gutt. x. ad xx. plusve.*

7. *Arcanum febrifugum nos. dos. a gutt. vj. ad x. 12. plusve ex cochl. Aq. stillatitiæ Appropriatæ & cochl. 1. vini hispan.*

To conclude, what we have said, and what Methods we have propos'd concerning the Cure of the Gripes, as the product of this present Epidemical reigning Fever, will (we doubt not) hold good, with some small variation, in the Cure of others of that species, altho from other Causes; For indeed we look upon the true efficient cause of the Gripes, (be the extrinick or occasional what they will) to be much what the same in all, that is, that the Gripes are no other (as we said) but a discharge of some exoticick febrile matter in the blood (which there pent up would cause a spurious fermentation, and thence a

Fever

Fever) thence transmitted into the Intestines ; and that whether the blood has that ingendred from a too plentiful eating of Fruit (the most ordinary cause of the Gripes) or other inconcinuous Food , or that it receives it *ab extra*, from the Air : From which cause soever it receives, yet I say, the same alterations and fermentations are begot in the Blood, and Nature is much-what put upon the same manner of discharges , so that thence the causes and symptoms coincide ; whence by a genuine deduction it may be concluded, that the Methods conducing to the Cure, are much-what the same.

Concerning all which, (viz. the nature, causes, symptomes, and branchings of Fevers, the *rationale* (I say) or ætiology of all which, together with their several Methods of Cure,) we design from a novel *Hypothesis*, to give a larger account in our intended *Pyretologia* : To which this, and our former Essay, as also our *Medico-Philosophical Analogy* betwixt Animal and Vegetable Juices, (in order to the right understanding of their several modes of fermentation, leading to Fevers,) ensuing, are but preliminary, and chiefly intended to usher that piece into the World.

A
Medico-Philosophical
ANALOGY
BETWIXT
Vegetable and Animal
JUYCES,
(*Viz.*).

Betwixt the Juyce of the
GRAP E, with other Fermen-
table Liquors, and the Blood of
Humane Bodies, in order to Fer-
mentation and the right under-
standing of F E V E R S.

Humbly offered
To the Consideration of the *Royal*
Society and Colledge of Physitians.

By *W. Sympson, M. D.*

M DC LXX VII.

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Λ

Medico-Philosophical
ANALOGY
 BETWEEN

*Vegetable and Animal Juices ; (viz.)
 between the Juice of the Grape ,
 with other fermentable Liquors, and
 the Blood of Humane Bodies.*

(I.)



He Principles or constitutive Ingredients of the one are congenial to those of the other ; the material of both is Water ; the Mechanical are an *Acidum* and Sulphur , with this difference, that the Animal Juice has an Armoniack Salt interwoven, as we elsewhere in our Treatise of Fermentation, in our *Philosophical Dialogues*, and *Tentamen Physiolog.* illustrate.

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(2.) These

(2.)

These Mechanical or active Principles being set into motion (the spring of alterations amongst Bodies) make those mutual Collisions and justrings in Vegetable Juyces, we call Working, or Fermentation, and that in order first to a separation of heterogeneous (viz. tartarous) parts, and next thence to the clarifying or depurating themselves into limpid, noble, generous, equal-temper'd, and balsamick Liquors: And analogically the same Principles with their interwoven Armoniack, set into their mutual duellings and Collisions in the Fabrick of Animal Juyces, perform that very thing we elsewhere call the natural and genuine Fermentation, peculiar to the constitution thereof, whereby it becomes Arterial Blood.

(3.)

As the Collision of the Principles of Wines is the (by us supposed) true cause of their effervescence: So in like manner (*mutatis mutandis*) the Collision of the constitutive Mechanick Principles of the Blood, (in whose regular order chiefly consists the genuine fermentation thereof) is the true cause, first, of all natural heat in all parts of the Body, which indeed immediately flows from this Fountain of Natural Fermentation disseminated through the whole.

And

And Secondly, the same Principles put into higher Fermentations or more agil Collisions, are the cause of all feverish Ebullitions of the Blood, and indeed of all Fevers, and of the exorbitant heat thence issuing, as the very proximate effect thereof.

(4.)

As the justlings of the Principles in their slow-pac'd Fermentations, while upon the wheel of Vegetation and Maturation, by their different Acids hitting upon their connate Sulphurs, give the *phenomena* of Colours peculiar and specifical thereto, (*viz.* to such as have any tincture) which they yet retain with more vividness after their Fermentations (in order to vinous Liquors) are over; which Acids, I say, striking upon their proper Sulphurs exhibit the variety of Colours: so likewise from the similar duellings of the Mechanick Principles of the Blood, the volatile or urinous Salts hitting upon the Sulphur thereof, strike that deep rubie tincture, peculiar to the Arterial Juyce or Blood. For we see that volatile urinous Salts mixed with such Fruits of Plants, whose Sulphurs are prevalent, strike deep red tinctures; for instance, Spirit of Urine (which is much-what the same with that of the Blood) poured upon Cochineel, or mixed with Spirit of Wine, and then poured on, strikes a very deep tincture, strangely heightened as the Colour; and so the like it doth upon
Saffron

Saffron, &c. So Spirit of Urine or Spirit of Hartshorn mixed with an Animal Sulphur, strikes a blood-red tincture; the truth of which I can shew to any curious eye by matter of fact.

(5.)

As the perfection of a vinous Juyce, consists much-what in its flavour, which is a sort of flowriness, resulting from the nobleness of its Sulphur, and the well and equal temperature of its Principles, smiting our gust with a pleasant relish, sweetly diffusing it self into the Organs of that *Sensorium*: so in like manner the Blood, if well-temper'd and equally pois'd in its Principles, in its florid constitution, has its flavor, evident in the vivid colour and delicate floridness of the Complexion, especially in such persons we usually call Sanguine, whose lovely colour treats the eye no less, then a plentiful Banquet doth the Palat. This is the flower of the Blood, that springs immediately from the nursery of a well-constituted Sanguine Juyce.

(6.)

As a little leaven leavens the whole lump, and a little ferment once begun in the Juyce of Grapes or other Vegetable Liquors, ferments the whole, not ceasing, till all heterogeneities be subjugated, and the Liquor be brought to an Equi-
librium

librium of Principles or equal temperature: Even so a little ferment in the Blood, naturally inbred from the very constitution of its Principles, ferments the whole Mass, not ceasing till it has conquered and separated all heterogeneities, is brought to an *Equilibrium* of active Elements, and is sufficient to perform its own circulation, as also that of other Juices (from and into it self) afterwards to be mentioned, and in order to nourishment and vital Functions.

(7.)

These Wines thus made from the intestine Collision of their intrinick Principles (as aforesaid) do generate Spirits, which we call vinous Spirits, the immediate result of the aforesaid fermentation or depuration by fermentation. In like manner Blood prepared from the peculiar Collision of its intestine Mechanick Principles, doth generate Spirits, which are the proximate result, next emerging from its intrinick genuine Fermentation; which two sorts of Spirits, (*viz.*) of Vegetable and Animal Juices, although they agree in the manner of their production, as both immediately resulting from (and as the off-spring to) Fermentation, as also in their volatility and facil avolation, in some Wines of a looser compage, more easily taking wing, especially in open Vessels, and in some exhaustible by gentle adventitious heat, than in others, yet in many respects they differ; and

and that first, by reason of the difference of Organs, which in Animal Juices conspire to the Fabrick thereof: For if fermentable Juices in Vegetables had the same Organs and Vessels for their Spirits to circulate, volatise, and depurate themselves in as Animals have, then might we see Trees and Plants move as Animals do, and might without a Metaphor be call'd Plant-Animals; but this as repugnant to the order of Nature we wave.

Secondly, They differ in taste; For, as to Animal Spirits, although we know not their proper and genuine taste, as being too subtile to be the object to any (but the subject or efficient to every) Sense: yet we may be sure they have no such figure of parts, nor are of such texture, as to make the same impressions upon our senses, as those vinous do: they are not (as I conceive) at all saline, as some *Neotetricks* imagine, but but have an essence peculiar to themselves, and distinct from all other things in the World: being too quick for the acutest of our Organs of sense to make the least discoveries of them, and yet none of them perform their Offices, nor absolve their functions without these spirits.

Thirdly, They differ in their operation or function: For vinous Spirits being taken inwardly, or Wine it self taken moderately, by the virtue of the same Spirits, cheers the heart of man, but taken immoderately, stupifies, intoxicates and debilitates the humane Animal Spirits: whereas the Animal Spirits have no such operation

operation of themselves, but are the very springs of all motion and the mechanick powers of the whole body, from whose degrees of vigour depends the weakness or strength of the whole: For if these languish, exhale, or be suffocated, the whole bulk of the body flags and falls by its own weight.

Lastly, They differ in flagrability, the vinous being from plenty of its sulphurous parts, and its aptitude to those more rapid fermentations, prone to take flame and wing too: The other by reason of the plenty of a *serum* or *latex* and an interwoven *Armoniack* Salt (besides what they are from their own peculiar Nature) are not apt at all to take flame.

(8.)

From these vinous Juices at Vintage-Seasons, issue forth some fermental parts, or as it were seminal *effluvia*, partaking of (because resulting from) the nature of Wine, which float in the air, and are carried at great distances; whence they become ferments congenial to Wines, which by their penetrative nature have easie ingress into the body of Wines, and being a-kin to the principles thereof, put them into a fresh fermentative motion, making them reimbebe their tartar formerly precipitated, so all are reduc'd to a confus'd working and fermenting state, which is a sort of Fever in Wines. In like manner, the rubicund Sanguin Juices of humane bodies,

bodies, do upon febrile fermentations, where their constitutive mechanick Principles fall into other, and different Collisions, than are proper to them in their natural temperature and state, do, I say, send forth some subtile *Effluvia* or agill steams, partaking of the nature of those principles, which float in the Air, and become ferments capable of gliding into, and acting upon other similar Juices: from which Analogy, as the one is the main source of all fresh fermentations in Wines; so the other is the chief spring of more general febrile fermentations, or Epidemical Fevers in humane bodies, and those whether continued or intermitting, Fevers, or Agues so called.

(9.)

As Wines or other fermentable Liquors are (besides from the causes aforesaid) apt to contract new fermentations by motion in either carriages, or by water, and sometimes although they by their position have no other extrinlick motion, than what some sorts of winds carry along in their belly, seceretly bearing along with them some occult ferment adapted for such purposes, by which (or perhaps from some other causes) they are brought into new and brisk Collisions of their principles, whereby fresh fermentations are induc'd, such I mean as are not ascribable to causes allotted in the preceding Paragraph.

So likewise the Blood (that fermentable Juycce of humane bodies) is apt to contract new fermentations from other causes than aforesaid; and that for instance, either by cold got by immoderate Exercise and too sudden cooling, whereby the Pores are obstructed, those common outlets or sluices for the steam or *aporrhœa* of the blood, which continually and naturally flow from its genuine fermentation or equal-temper'd intestine Collisions of its Principles, which being blockt up, and that which should, cannot expire, recoiling, strikes up a new sort of ferment than the natural, causing the Principles to fall into other Collisions than what are genuine and constitutive, thence bring on a Fever: or by taking cold from wet in Journeys or raw moist Air or night-Airs; all which from the aforesaid causes procure febrile fermentations: as also by Epicurizing or immoderate eating and drinking, most frequently by drinking Wines, especially new Wines, the like sort of Fevers which are not Epidemical, but Endemial, or Sporadical are contracted: Nay, further, sometimes the Air has an occult ferment disseminated (not from causes recited in the fore-going *Paragraph*.) which seizing upon the Blood of many persons (those I mean whose *Crafsis* of Blood are more loose and apt to imbibe, do more readily receive, than others who have a more robust and firm *Crafsis*) cause such alterations in the Sanguine Mass as to produce Fevers.

What Enlargements we make upon this *Paragraph*, by shewing the manner of production of Fevers, taken by cold, by an adapted *Mechanism* or sutable *Enchiresis*, and how in lieu of such Fevers, are sometimes other Maladies contracted, signaturiz'd by other Names: *viz.* If the recurring *latex* acuated with a febrile *Acidum* fall upon the *Larinx*, how a *raucedo* and sleight Cough, if upon the Lungs, how a more thorough Cough with shortness of Breath; if upon the *Os Athmoides* or adjacent Glandules, how a *Coriza*: if upon the *Meninges* a violent *Cephalalgia* or Head-ach: if upon the *Synovia* of the Joints, it becomes either a new Ferment, or able to excite an old one in order to the producing Arthritical pains: how these Diseases spring sometimes from the same causes Fevers do, and how they differ as they take their original from a vitiated *latex* cast upon such and such *viscera* from the same as produc'd immediately from the Blood, all which we enlarge upon in our *Pyretologia*.

(10.)

As some Wines (who have already undergone the first fermentation to make them such) from the natural constitution of their parts or from their peculiar texture are more prone to ferment *de novo*, than others are, whose compage are more closely bound up, or their principles more firmly knit: So in like manner, the rubie Juices of some Men or Women, are from their natural
tex-

texture or peculiar constitution of parts more prone to fresh Fermentations, and consequently more apt to Fevers than others, whose compage of Blood is more firmly bound, and their Principles more closely united : For those Constitutions whose Principles are naturally more loose and more slenderly knit, whereby Nature is not enough upon its guard, those, I say, are soonest and most apt to be surpriz'd by the private access of so subtle an Enemy, and indeed thence prone to Fevers from the aforesaid occult (because usually unknown) cause ; whereas those who have the compage of their Blood more closely knit, and more firmly united, their *Crafsis* is generally so well fortify'd as that they are more healthful, rarely prove to Fevers, even in Epidemick seasons : As the Eighth *Paragraph* shews how it comes to pass that many take Fevers much about a time, whence they become Epidemical : so this shews chiefly who they are, (*viz.*) of what Constitution as to the Fabrick or the Principles of their Blood, who, I say, are so lyable to such Fevers, who not.

(11.)

As Wines undergo a supre-induc'd Ferment from causes aforesaid, its either from a Ferment in the Air congenial to its Principles as above-said, and so enriches the Wine by fresh impregnations with new similar matter from the rais'd Tartar, whereby the Wines are set a-boiling of

D

fer-

fermenting by a fresh imbibition of their deposited rich *Fæces* : or else its from some fret the *Acidum* of the Wine is put into, whereby it forcibly carries off in an eager fermentation the sweet sulphurous parts, not unlike the mixing the Spirit of Nitre and Spirit of Wine, (which upon strong Collisions of the sulphurous parts in a thick forcible fume,) whereby robbing the remaining Liquor of its soft, sweet, balsamick Essence, in lieu of it a pontick austereness or eager Acrimony is brought on.

So in like manner it is with the Blood : For some slighter sort of Fevers help to depurate the blood, by attempting thereby a new and better state, or more firm nexure of the essential parts than before ; whence the heterogenietics being once separated, and the blood thereby brought to another and better texture than before, the Fever easily goeth off, thereby enriching the Mass of Blood with a better stock of Spirits than formerly. Hence Agues in the Spring (if not spun to too long a thred) prove (from the aforesaid causes) great helps to mend the *Crafsis*, and thereby to rectifie and fortifie the constitutions of some persons, making them more healthful afterward than before. The same we may say of Fevers we call the small Pox, if the Patient comes off safely and without any recreational sediment left in the blood or blood-vessels, or cast upon any of the Bowels, *viz.* that the *Crafsis* of such persons blood is more tight, and thereby their constitution render'd better and more healthful than before.

But

But if on the other hand, the Fever proceed from a fret of the *super-induc'd Acidum*, whereby in a high fermentation it forcibly carries off the soft, sweet, sulphurous parts of the blood, driving them away in a fume or hurricane; Then doth such Fevers, if not rightly manag'd, either by extinguishing or suffocating the vital spirits, cause a stagnation, cessation of circulation and consequently death: or if by a due regimen such Fevers go off, and their symptomes disappear, yet it is generally done by a great exhausting of Spirits, the blood being much impoverish'd in its stock of strength, its compage being not only relaxed, but also much weakned, its *Crisis* deprav'd, the sweet balsamick parts having by the former hurrying fermentation taken wing; and in lieu thereof the blood in such persons after the Fever is gone, is become pockt, austere, and almost a blood-eyer, even as Wines and Ale having by an over-fermenting or precipitating of their Sulphur lost their sweet balsamick parts and degenerate into-Vinegar or Alegar: whence Scorbutick and sometimes Hydropick or other lingering Distempers are contracted, emerging from such a deprav'd *Acid Crisis* of the Blood, contracted by preceding Fevers.

(11.)

As after such exhaustions of Spirits, and carrying off the sulphurous parts by the aforesaid

over-fretting and forcible fermentation, the remaining Liquor proves sometimes degraded into an *Acetum* or Vinegar ; or otherwhile from the like causes with some little difference, is brought on a decaying vapidness of Wines, being so far got back again on their journey, as to be little better than Phlegm or Water (their first material and material Principle) so that if ever it be brought on again to be Wine, necessarily requires a fresh impregnation with a vinous ferment, and not only so but with some matter *analogous* to Wines for that ferment to work upon, and to change into it self.

Even so in like manner, the blood in some feverish persons is by the aforesaid spurious fermentation, robb'd of its Balsom, as also its genuine *Acidum* is together carried off, the spirits exhausted ; is, I say, thereby reduc'd much-what to a vapid plegmatick Liquor, which there-upon, if not cured or helped by proper medicinal Agents with suitable Diet, brings on great and indispensable Languishments, and the Patient dies of an Universal Consumption or wasting of Spirits, the proximate (and indeed ultimate) effect of such a male-temper'd Blood.

(13.)

As vinous Juyces or other fermentable Liquors do (by some irregularity in their fermentation, carrying off some of their sulphurous parts) need fresh feeding, either by resorbing

its own precipitated Tartar (as aforesaid) or by the additional of somewhat of Animal Bodies, as of Flesh, &c. and has a powerful ferment included capable of performing strange and admirable solutions : for instance, that Wine which had a Boy put in it, whom a Wine-Cooper had kill'd in a Cellar, and to hide the Fact opened the Head of a But of Sack (if I mistake not) and plung'd the Body of the Boy into it, so fastened it up : the Wine kept working and mudling a long time, that those who tasted it would have none of it, wondered what the matter should be ; so let it stand, and about three years after it was tap'd and found to be the richest and most brisk Wine that ever was drunk (the History of which is here too long to tell.) So also in other fermentable Liquors, as for instance, in *March-Beer* a worthy Gentleman and Friend of mine, being at a Noble-Man's house in the Country, had some Beer brought him of several years old, the richest and most Balsamick Drink that ever he drank in his life : The Steward told him, that the reason of the Excellency thereof was chiefly ascribable to the addition of a pound or two of Candles made of sweet Sheep-suet put thereinto, after it had stood a considerable time.

These with other Instances of the like nature obviously point out to us the solution of one remarkable *phenomenon*, which has puzzled the greatest not only of Philosophers, but even of Physicians, to render a plausible account thereof to

the World ; and that is no less than a suitable Analogy to acquaint us with the reasons of that mystical and hitherto abstruse operation of the Ferment in the Stomack of Animals , whose operation upon our assum'd Food, is so powerful and universal, as to make it approach the nearest (of any thing else in the World) to be *Alkalestical* : For as the *Alkalest* dissolves and reduceth all Bodies into their first elemental or constitutive Principles ; so doth this ferment or volatile Elixir of the Blood, sent from the Arteries into the Stomack, penetrate the body of all our Food, unlocks the compage thereof, and sets its intrinsick Principles into a fermentative and degestive motion in order to a future assimilation to Blood and Nourishment.

So that hereby is pointed out such a circulation as has not, that I know of, ever yet been made known to the World : The Circulation of the Blood is novel, but this much more, which is a circulation of humours, whereby the blood continually and (unless interrupted by Diseases) uncessantly sends forth a subtile penetrative Elixir into the Stomack, which becomes thereby the very efficient of the digestion peculiar thereto, which is able to resolve all the Food we take into a Milky Juyce or Chyle, and thence by another ferment sent from the Blood to the Bile, and so the Intestines by the common *ductus*, is further prepared and elaborated by those due Secretions from the more drossie, feculent

culent and excrementitious parts, fitted for the *Lacteals, Pancreas, ductus Thoracicus, &c.* so into the blood; in which rubicund Juyce is the afore-said Elixir further elaborated, which in *modum roris vividi* is sent to the Stomack, and so goes on with the round of Operations.

Thus the Blood cannot have a better Emblem as to these circulatory Functions, than of a Serpent devouring its own Tail; in as much as where it should seem to end, there it begins again, nothing coming into it in *magno* but what has gone from it in *parvo*; no steam runs from it, but what by a reflux runs into it again; no nutritive Juyce is carried into it, but what is first subjugated, penetrated, suffers sequestrations of feculencies, and so elaborated as at length to be assimilated thereby; so that its the source of the eminent digestions, secretions and other functions of the whole, yea the very spring of the circulation of all humours circuiting in the whole body.

(14.)

As the Juyce of Grape may be highly exalted and rich in principles by a frequent drawing off after precipitation of recrements (it cannot well bear up unless under a mudled state) and preventing (by Iron-hoop'd Vessels close-stop'd, and full to hinder access of Air) all fermentation, till it arrive at the consistence and clarity of a well-made Syrup, which must yet be kept

in close and full Vessels, left by the access of Air it begin to ferment: Then doth such a Juyce so prepared become truly that we call Stum, which Stum if it ferment, will break the strongest Vessels in pieces, unless presently drawn off.

So in like manner, the Blood of those persons who feed plentifully and use little Exercise, becomes (for want of being sufficiently ventilated by Air and motion of the parts) not enough fermented or volatiz'd, but floats in a more thick, rich and Syrup-like consistence, whereby it's heightned to a sort of Animal Stum: And then if occasionally from more than ordinary Epicurizing or some cold taken or the like, it fall to ferment, thence indeavouring to thin and volatize it self, the fermentation (before that can come to pass) many times proves so strong, as either a violent Fever is brought on, whereby the Patient (if very speedy and adequate help be not made) is quickly swept off, suffocating the Vital Spirits by a too great plenty of fermentative Fumes arising from the boiling blood, not finding sufficient vent. Or if the Patient makes an escape from the Arrest of Death, it's chiefly by Nature's throwing some of the stum'd Spirits upon the *Synovia* of the Joynts, whereby it becomes a seminary to the Gout, being such a foundation thereto, as that it thence frequently afterwards by its on-sets makes its appearance: or if upon the fermentation, sagacious Nature foreseeing the tragical scene (if not somewhat anticipated) finds out some private con-

conveyance, before it arrives at such a height of fermentation, whereby the matter is much-what cast upon other more remote parts, thence is a foundation laid for *Nephritical, Arthritical, Ischiatical*, and *Podagrical* Pains and *Paroxysmes*, as also gives beginning and being to *Rheumatisms*: all which might well be help'd and much-what prevented by often drawing off the Animal Wines or Juyces, viz. by often Phlebotomy, (thereby giving the Blood more room to weave and display its active Principles) frequent taking the Air, moderate Exercise, and an abstemious Dyet, by which means might the Liquor of the Blood be much altered and brought to a better *Crafsis*, and thereby prevent the Stum and its consequents, viz. the impending Fever, Gout and other Arthritical Maladies.

(15.)

As the Juyces of divers sorts of Grapes, being at the Vintage mixed, sometimes do cause a greater Fermentation, and more than ordinary Effervescence, and that chiefly from the difference of connate Acids fretting upon their Sulphurs. So likewise the great variety of Food we take in, whether Meat or Drink, or both, do sometimes from the difference of their native Acids, acting upon and digladiating each other, or their connate Sulphurs, beget, when brought (by the circulation of Juyces aforesaid) into the Blood, new Fermentations, such as are truly

ly febrile, whence some sorts of Fevers are frequently produc'd: only with this difference, that if these fretting Acids differ amongst themselves do, while in the Stomack, (before their further progress) make a boiling and heaving, they immediately bring on a Surfeit or one sort of *Morbus Cholera*, peculiarly depending upon the solatory regimen of the Stomach, which discharging it self *sursum ac deorsum*, all is presently well: or if while in the Intestines, viz. the *Colon*, *Ilion*, &c. (being got thither before the great tumult break forth) they find an *Exit* by the Postern-gate, a Looseness being caus'd, which being over the tumult is appeas'd, and thereby a Fever (otherwise immediately impending) is prevented.

(16.)

As Wines kept in Vessels not fill'd, or partly drawn off, do often through a too great access of Air, grow sour, their sulphurous parts meanwhile are either most-what fixed, masqu'd under another guise, or have taken wing, whence the *Acidum* prevails. So in like manner, the Blood in Fevers, if too much exhausted by Phlebotomy (which is the drawing off of those Animal Wines or Juyces) the sulphurous parts of the remaining Juyce, being much depauperated by former Fermentations, and thereby either precipitated or evaporated; whereupon those Animal Juyces being so much drawn off, as
afore-

aforesaid, the Air has too great an access to them, and thereby indangers yet the increase of their *Acidum*: whence it is, that such persons escaping the fury of a Fever, do many times either degenerate into Scorbutick or Hydropick states, (*viz.* where the *Acidum* or the *Pblegma* prevails, and the Spirits are either fret off, or drowned) or dye of languishing Consumptions. In all which the febrile *Acidum* glows, and works the remaining Sulphur, by which the Spirits take wing, or flag, and then necessarily follows at the heels thereof, death, that *ultima rerum & Morborum linea*, the period of Maladies as well as things.

(17.)

And as the one, (*viz.* the Vegetable) by *analysis* of parts, gives a Phlegm, Spirit and Tartar, and that Spirit is no otherwise flagrable, than from the high rapid Collisions of its innate *Acidum* upon the Sulphur, (according to our *Hypothesis*) and that Tartar again is separable into Phlegm, Acid, Oyl, Volatile Spirit, and *Cap. Mort.* out of which is separated a fixt Salt, leaving the earthy feculency or *terra calcinea*: none of which are exactly such in the texture of the Vinous Liquor, or in the compage of the Tartar, but arise much-what from new Combinations of the Principles, so and so huddled together by force of Fire, as we elsewhere further shew in our *Tentamen Physiologicum*. So in like
man-

manner the Blood analyz'd by the same Agent, & *modus operandi*, doth split into Phlegm, Sulphur, volatile Salt, with a remaining *Cap. Mrt.* out of which by further Calcination, (as from the like Calcinations of other parts of Animals, whether *Viscera*, or Solids) is by Elixation separated a fixt Salt, solvable *per deliquium*, after which remains the *Fæces*, or *terra Calcinea*, none of which are exactly such in the compage of the Blood, but are the results of new configurations of the Principles, cast into such shapes by force of the Agent Fire. For the Volatile Salt is not such in the texture of the Blood, but is interwoven with its connate *Acidum*, by which it rather appears under an Armoniack Masque (as by the saline taste it has is evident) which having its Sulphur contemper'd therewith, and ring'd thereby in its Vehicle the *Serum* or thinner *Latex*, all which duely temper'd, makes up that rubie Juyce of Animal Bodies we call Blood, whose Principles being set into a slow-pac'd, and equal-pois'd Fermentation, from their gentle and mutual Collisions, becomes the spring of all motion, circulation, digestion, separation, &c. in the whole round of the Body, in order to Nourishment, supply of Spirits, and other Animal Functions of Sense and Motion.

(18.)

Their Analogy doth further appear from the congenearness of additional Ferments, (*viz.*)
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from the congruence or likeness of such as are us'd to set Vinous or other Vegetable Juyces a-working, to those adapted for the putting Animal Juyces into a Fermentation. For although the Juyce of the Grape from its natural aptness to ferment, rarely needs any additional; yet other fermental Vegetable Juyces, as of Apples, Pears, Damofens, Goose-berries, Honey, Sugar, Malt, &c. do many times necessarily require an additional Ferment, (*viz.*) some *flos Cerevisie*, which is by despumation cast off, and yet is a seminary to the further multiplication of the same or like Ferment. The excellency and efficacy of whose Nature, appears in that it doth not terminate in one solitary action, in as much as it as really contains, even in minute portions thereof, the Principles of those Juyces concentred, in order to their increase or multiplication, as the seedlings of Plants or Trees, do hide in themselves, the seminal Principles thereof, in order to their propagation, as we further illustrate in our *Eymologia*, or Treatise of Fermentation.

Thus the Blood of Humane Bodies needs not only a fresh supply of Food, whereby its Principles and Ferments (daily and hourly in expence) are to be recruited by a fresh impregnation from as daily assum'd Food, that as they are in a constant winding off, they may thereby be as proportionably and necessarily wound on, as in our daily necessity of Alimentary refection doth appear. But also the Blood needs some addi-

additional Ferment to set it a-work, and that sometimes, as it is either Syrup-like through plentiful feeding and little Exercise, wanting a Ferment to volatize and thin it, and so becomes a sort of stum'd Liquor, whereby the person is either (upon any occasional cause of setting it a-work) struck into a high and sometimes mortal Fever; or the Stum is remanded by private ducts upon the *Synovia* of the Joynts, whence Gouts, Rhumatisms and such like Arthritical Maladies, (as we mention in the Fourteenth Paragraph) or the Blood upon other accounts, (*viz.*) of depauperation of mechanick Principles and exhaustion of Spirits, through a late Fever, by an over-fermenting, together with loss of Spirits, through the male-treating thereof by exantlating Remedies, (if I could without a Solecism call them Remedies) hinted in the latter part of the Eleventh, as also in the Twelfth Paragraph, where the Blood is either reduc'd to an austere pontick Liquor, the root of succeeding Scorbutics; or is well-nigh brought to a vapid or almost insipid Liquor, the cause of following Wastings or Consumptions. In order to the restoring of which deprav'd Juice of the Arteries, both as to the sweetning and rendring it balsamical; as also towards the restoring it to its formerly lost, or at least greatly impoverish'd Principles, additional Ferments are indispensibly necessary, for the recruiting and multiplying that small stock of Vital Principles, which yet remain. What those are, and whence taken,

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we shall here no otherwise hint, than barely to say they are desum'd from Medicine, Diet, and change of Air; referring the Account thereof to our *Pyretologia*.

(19.)

As Wines or other fermentable Juyces need towards their defæcation, either the addition of *depurantia*, or *præcipitatoria*, that so a separation of heterogeneous matter, or dejection of the innate Tartar may the better be perform'd. Those additaments in order to the depurating of Wines, &c. are either such, as through whose tenaciousness, the feculencies of Wine are born down, of which sort are *Ichthiocolla*, *albumen ovorum*, &c. or are such as are endowed with a precipitating faculty, which smite down the grosser Particles, otherwise shut up in the Pores of the Liquor, of which sort are *pulvis Alabastrinus*, *Silices Calcinati*, *alumen ustum*, *Calx viva*, &c. So likewise the Blood in its confus'd jumbled state, requires its *depurantia*, and *pricipitatoria*, in order to its defecation, by the separation of heterogeneous matter, and the dejection or precipitation of its febrile Tartar, which what those are, will be matter of inquest in our *Pyretologia*.

(20.)

And as under different considerations of Fermentations,

mentations, Natural and Artificial, and the various modes thereof, and in their *Analysis* into fictitious Principles, &c. the Blood and Vegetable Juices accord in the particulars aforesaid: so likewise in some respects, they symbolize as to their conservations or preservations; as to which it's evident, Wines are preserv'd upon their Lees, or while they are undrawn off from their Tartar. And Ale may be preserv'd long, even to the *Indies*, as a Master of a Ship told me, he had known, and that by no other way than the putting into each Vessel, one Egg or two whole, which will in time be fretted so as the shell will become as soft a film as if corroded by Vinegar, and the rest not useful will be rejected in the form of a Slime: that which the Ale preys upon is as a new and long continuing but slowly (and intrinsically) working Ferment. The same towards preserving of Ale doth Argol.

(21.)

Lastly, As in their conservation, &c. the Blood and Vegetable Juices agree as aforesaid: so likewise as to their Reductions, or Cure from such spurious Fermentations they are prone to fall into: And that first from an External, and secondly from an Internal Cure. As to the first. In that Wines freshly fermenting upon their Lees or Tartar, as being set a-boiling by a fresh imbibition of their deposited rich Tartar, are usually

usually decanted or drawn off from Vessel to Vessel, whereby the over-boiling from the strong Collisions of their Principles are much abated and taken off, and they by such drawings off, are aptly cured, and for the future such like much what prevented. So in like manner, Blood boiling or fretting upon its Lees, (*viz.*) upon its precipitated matter, on which some of the febrile *Acidum* has fix'd it self, as in all intermitting Fevers, or over-fermenting through the introduction of an exotick *Acidum*, as in all continued and putrid Fevers (as they are called) whereupon some of the Blood must (for want of better Medicines) be drawn off, tapping the Vessel by Phlebotomy, to make room for the rest the better to weave in; the Blood in all febrile Fermentations being the more rarify'd, as well as Wines are so by theirs.

As to the latter, (*viz.* the Internal Cure) the Blood and Wines or other fermentable Juices do yet retain an Analogy. For as Wines when they over-ferment, are best cured by somewhat proper for the purpose cast therein, ordered according to the skill of Wine-Coopers or Vintners, in the right performance of which their Master-piece is shewn, and the skilful ordering whereof is reckoned amongst their *Arcana*, in the Catalogue of which *Icthiocolle* is perhaps not the least.

Even so in like manner, the Blood while it over ferments, as in all Fevers, cannot better be cured than by inward Remedies, *viz.* by such

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things taken inwardly, as are of such energy, as gradually to restrain and put a stop to the spurious Ebullition, and immoderate Effervescence of the Blood, and that according to the best skill of the Physician. The right performance of which is indeed the Master-piece of the Doctor, and such Medicaments may be truly reckoned *Arcana*: of which sort are, or have been Volatile Alcalies united to some Mineral Sulphurs: also fixt Alcalies made volatile, and elixerated with some noble Volatile Specificks, *Mercurius precipitatus Diaphoreticus*, otherwise called *Aurum Horizontale*: *Poterius* his *Antipureton*: *Riverius* his *Febrifugum*: *Goddard's Drops*, especially such of them as are so prepared, as to hide an invisible Mineral Sulphur in them, &c. Nay, that some Vegetables, even unprepared, may herein perform very considerably, will appear by this following Instance, which, may intimate, if not truly point out a Paralelism, viz. the recovery of Beer first from a sourness: secondly, from a thicknes or ropiness. As to the first, viz. a sourness contracted either by an over-fermenting and thereby an avolation or precipitation of the Sulphur, or by some other alteration, by which the *Acidum* prevails, the recovery of which, I say, is perform'd by putting two handful of ground-Ivy into a Vessel thereof, which will bring it to rights again. As an Ingenious Merchant, a worthy Friend of mine acquaints me, has known it frequently done in the *East-Country* by his own advice with good success

success. As to the second, (*viz.*) the reduction of it from a thick and ropy consistence, is done by putting a handful or two of Hyssop into a Hogsh-head of such Beer, by which means I have in less than 24 hours, sometimes had my own Beer recovered.

And (to haste) as fermentable Juices, suppose of Ale or Beer, being become sour or ropy, may by being distill'd *per descensum* through fresh Malt, or the *Cap. Mort.* thereof, *viz.* Grains or Draff, lose their pontickness and thickness, thence may be sweetened and made good potable Liquors again: Even so the Blood, or other Juices of the Body, which by depravation have contracted a sourness or spurious Acidity, may in their circulation (meeting with some parts (consonant thereto) sweeten themselves by depositing their Acidity, so distill'd *per descensum* (as I may so say;) which however that Acidity may become the *Minera* of some other Diseases, yet thereby the Blood and other Juices are edulcorated, and reduc'd to their Eucrasie, and genuine temper.

Wines, in general, when they degenerate, either become rancid, mucilaginous, acetous, (*viz.* sour) or vapid: If the former (*viz.*) that they are rancid or mucilaginous, they are to be cured by the Infusion of burnt Alom, *Calx vive*, *Gypsum*, Salt, &c. If the latter, *viz.* that Wines are by an over-fermenting or other equivalent causes impoverish'd, and thence either rendred acetous (*viz.* sour) or vapid, they are no better to be cured than by a fresh impregnation with an opulent Tartar,

Tartar, as also by a Syrup made of rich Wine Sugar, and some good Aromaticks. Thus also for repairing the Colour of Wines, not only Milk simply is us'd, but also Milk boiled with *Ichthyocolla*, or Amyl put into Wine-Vessels, &c. all which shew (and that to our purpose) how Wine decaying or over-fermenting, are by the due application or exhibition of inward Medicines recovered and cured, which how in those Cures they accord with humane Juyces, especially the Blood (to maintain the Parolelism) we have already hinted.

To conclude, The manner of which Operation of such *Arcana* (as aforesaid) upon the Blood, is short is this, (*viz.*) To alter and purifie our rubie Juyce by dinting all spurious febrile Ferments allaying all the tumultuous Ebullitions thereof and consequently of other Juyces depending thereon, by precipitating the febrile matter, or by disposing the Mass of Blood so as to carry off the heterogeneities by Urine, Seige, insensible perspiration, &c. by proper ducts better known to Nature than to us, through their minuteness: and also not only by making due separations, but likewise by restoring the Blood to its *Eucrasia*, and so fortifying it in its right temperature: of which we now take but time barely and transiently hint, referring the further Discourse thereof to its proper place in our *Pyretologia*, or intended Treatise of Fevers.

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